

Acromioclavicular Joint Injuries

See also Rotator Cuff Injuries

See also Shoulder Physical Exam

See also Shoulder Rehabilitation

Background

1. Injuries involving area where distal clavicle and acromion meet
 - AC separation
 - Stress across joint injures supporting structures
 - Can range from mild ligamentous/capsule strain to complete rupture and significant displacement
 - Clavicle fracture
 - Degenerative joint disease (DJD) of AC joint
 - Osteoarthritic spurring
 - Degeneration of fibrocartilaginous disk
 - Occurs with repetitive overhead activity
 - History of trauma
 - Osteolysis of the distal clavicle
 - Pathologic process involving resorption of subchondral bone in distal clavicle
 - Result of remote trauma
2. Seen in:
 - Collision sports-football, rugby, hockey
 - Sports with repetitive overhead activity-tennis, throwing, weight-lifting
3. General info
 - Joint has a capsule with synovium
 - Stabilized statically by acromioclavicular and coracoacromial ligaments
 - Stabilized dynamically by deltoid and trapezius muscles
 - Diarthrodial joint-fibrocartilaginous disk
 - Joint has 5-8° of motion
 - In athletes-crucial to distinguish between surgical and non-surgical treatment

Acromioclavicular joint injury

Pathophysiology

1. Injuries to the AC joint result from:
 - Fall or a direct blow to area
 - Indirectly from fall on extended upper extremity-drives humeral head into acromion
2. Incidence, Prevalence:
 - 10% of shoulder injuries involve the AC joint
 - Most common in second decade of life
 - 5:1 male to female ratio
 - 2:1 incomplete dislocation to complete
 - Rates:
 - Rugby 32%
 - Collegiate and professional football 33-41% of shoulder injuries
 - Skiing 22-79%
 - Ice Hockey 15%

- Wrestling 4.5% of all reported injuries
- Overhead athletes have a 67% incidence of AC joint DJD by their 4th decade of life

3. Risk factors

- Contact sports
- Sports with overhead activity

4. Morbidity / mortality

- 14-17% of type I-III injuries will have continued pain/loss of function
- No features to predict which patients will have continued pain/dysfunction
- Pain
- AC joint osteoarthritis
- Instability
- Impingement with scapular dyskinesis
- Decreased strength

Diagnostics

1. History

- Mechanism of injury (sport and type of fall, blow)
- Direct blow to area or fall
- Pain over superior and anterior shoulder
- Nocturnal pain when rolling onto affected shoulder
- Pain with overhead motion or adduction of arm across body
- Dips and bench press often cause pain
- Previous injury to the area

2. Physical exam

- Deformity over AC joint
- May or may not be present
- Tenderness over AC joint
- Worse with overhead range of motion
- Range of motion usually normal
- Pain with cross-body adduction of affected arm
- Swelling/bruising
- Clicking at AC joint
- For more severe injury-compare anteroposterior or vertical translation of distal clavicle to uninvolved side
- Document brachial plexus and vascular exam of involved extremity

3. Diagnostic testing

- Diagnostic imaging
- Routine radiographs:
 - AP and axillary views
 - Zanca view (15 cephalic tilt of AP view with 50% of penetration)=most accurate view
 - Weighted views not recommended
 - For type IV-VI consider MRI to view soft tissue injury
 - Other studies
 - Ultrasound examination-operator dependent

Differential Diagnosis

1. Distal clavicle fracture
2. Osteoarthritis of the AC joint
3. Osteolysis of the distal clavicle
4. Aseptic inflammation of acromioclavicular joint

Therapeutics

1. Type I-II
 - Acute Treatment
 - Sling 5-7 days, 1-2 weeks for Type II
 - Ice
 - NSAIDs
 - Early isometric exercises and range of motion
 - Further Management (24 hrs)
 - Restriction of heavy lifting/contact sports without protection
 - Taping/strapping for sports participation- no longer indicated due to skin injury
 - Cutout soft pad to protect area may speed return to athletics
 - Strengthening exercises as symptoms resolve
 - Phase I- isometric contraction, assisted active range of motion
 - Phase II- isotonic arc movements with protected range. Avoid pressing
 - Phase III- functional participation with increasing strength and scapular control
 - Phase IV- return to activity and sports specific drills
 - Long-Term Care
 - Return to play when full pain free range of motion and strength achieved
 - Usually 1-2 weeks for Type I
 - 2-3 weeks for Type II
2. Type III
 - Most often non-operative treatment as in Type I and II
 - Elite overhead athlete-may consider surgical evaluation
 - Surgical treatment for overhead elite athletes with pain that persists longer than 3-6 months after injury
3. Type IV-VI
 - Orthopedic referral for surgical correction is recommended

Follow-Up

1. Return to office
 - 2-4 weeks after injury
 - Return earlier if pain level does not improve and gentle range of motion exercises not tolerated within first two weeks
 - If neurovascular abnormalities develop
2. Refer to specialist
 - Type IV-VI refer for evaluation same day if possible

- If continued pain/weakness despite physical therapy 3 or more months after injury
- 3. Emergency department referral
 - AC joint dislocation with skin break

Prognosis

1. 80% of type I-III injuries do well with non-operative treatment
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Degenerative AC joint disease

Pathophysiology

1. Occurs after acute or repetitive trauma to AC joint

Diagnostics

1. Radiographs of AC joint
2. Joint narrowing
3. Bone spurs

Therapeutics

1. Non-steroidal anti-inflammatory medication
2. Corticosteroid injections
3. Surgical resection of distal clavicle if pain persists despite aggressive non-surgical treatment

Prognosis

1. Poor

Prevention

1. Avoidance of repetitive overhead trauma
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Osteolysis of the distal clavicle

Pathophysiology

1. Occurs after acute or repetitive trauma to AC joint
2. Results in articular cartilage and subchondral bone damage

Diagnostics

1. Radiographs of AC joint/distal clavicle
2. Bone scan and MRI activity may be helpful for earlier diagnosis

Therapeutics

1. Rest
2. Avoid activities which compress clavicle into acromion
3. Non-steroidal anti-inflammatory medication
4. Corticosteroid injections
5. Surgical resection of distal clavicle if pain persists despite aggressive non-surgical treatment

Prognosis

1. Prognosis is good for those who can avoid inciting activities
2. Surgical outcomes favorable

References

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